Closure Report for the Groundwater Treatment Facility, Test Area North, Operable Unit 1-07B

Idaho Completion Project

Bechtel BWXT Idaho LLC

October 2004

### Closure Report for the Groundwater Treatment Facility, Test Area North, Operable Unit 1-07B

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Idaho Completion Project Idaho Falls, Idaho 83415

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U.S. Department of Energy
Assistant Secretary for Environmental Management
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### Closure Report for the Groundwater Treatment Facility, Test Area North, Operable Unit 1-07B

ICP/EXT-04-00634

Approved by	
Dong S. Vandel	10/7/04
Doug S. Vandel	Date
BIC Project Engineer	
Ju Melson	10/7/2004
Lee O. Nelson	Date
OU 1-07B Project Manager	

### **ABSTRACT**

This report documents the closure of the Operable Unit 1-07B Groundwater Treatment Facility at Test Area North (TAN-1748) at the Idaho National Engineering and Environmental Laboratory. This activity began in November 2003 and was completed in June 2004. The primary objectives of this activity were to eliminate potential safety hazards and dismantle and dispose of the Groundwater Treatment Facility's process equipment, tanks, and piping. As required in the applicable Operable Unit 1-07B project documents, the treatment system was rinsed, disassembled, removed, and properly disposed of. The tent structure that housed the treatment system has been left intact to support other Idaho National Engineering and Environmental Laboratory activities. All waste streams generated during this activity have been properly profiled and disposed of.

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### **ACRONYMS**

CERCLA Comprehensive Environmental Response, Compensation, and Liability Act

D&D decontamination and dismantlement

DOE-ID U.S. Department of Energy Idaho Operations Office

FTL field team leader

GWTF Groundwater Treatment Facility

ICDF INEEL CERCLA Disposal Facility

ICP Idaho Completion Project

INEEL Idaho National Engineering and Environmental Laboratory

ISB in situ bioremediation

IWCP Integrated Work Control Process

MCP management control procedure

NPTF New Pump and Treat Facility

OU operable unit

PLN plan

STD standard

TAN Test Area North

TCE trichloroethene

TSF Technical Support Facility

USC United States Code

WO work order



### Closure Report for the Groundwater Treatment Facility, Test Area North, Operable Unit 1-07B

### 1. INTRODUCTION

This report documents the closure of the Operable Unit (OU) 1-07B Groundwater Treatment Facility (GWTF), located at Test Area North (TAN) Building 1749, at the Idaho National Engineering and Environmental Laboratory (INEEL). The facility has been decontaminated and all associated equipment has been dismantled and properly dispositioned. This report provides background related to the decision to discontinue GWTF operations (Section 2) and identifies the applicable Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 USC § 9601 et seq.) closure requirements (Section 3). The decontamination and dismantlement (D&D) activities that were conducted are summarized in Section 4, while final disposition of the waste is discussed in Section 5. Section 6 provides a description of the final site conditions and Section 7 provides a statement of compliance with the applicable closure requirements.

### 2. BACKGROUND

The GWTF was put into service in February 1994 as an interim action. The primary objective of the system was to hydraulically contain the highest area of contamination near the historic Technical Support Facility (TSF) injection well (TSF-05). The interim action was referred to as OU 1-07A. The GWTF system was designed to extract water from TSF-05 and treat the contaminated groundwater at a rate of 50 gal/min (189 L/min). The GWTF used solids removal, air stripping, carbon adsorption, and ion exchange to treat the extracted groundwater for volatile organic compounds, radionuclides, and metals. Initially, the treated water was pumped to the TSF-07 evaporation pond for disposal. However, shortly after the start of operations, the system was modified so that the treated water was disposed of into a new injection well located within the TSF-05 source area (TAN-31 well). The GWTF, as well as a field laboratory, was housed in four sea-land containers enclosed in a membrane-covered Sprung® structure.

The Record of Decision Declaration for the Technical Support Facility Injection Well (TSF-05) and Surrounding Groundwater Contamination (TSF-23) and Miscellaneous No Action Sites Final Remedial Action, Operable Unit 1-07B Waste Area Group I (DOE-ID 1995) directed that pump-and-treat technology be used to restore the groundwater contaminant plume and that treatability studies be conducted concurrently to evaluate alternative treatment technologies. The final remedial action selected in the Record of Decision (DOE-ID 1995), referred to as OU 1-07B, consisted of three distinct phases, as follows:

- 1. Phase A—covered the transition of the OU 1-07A interim action to the OU 1-07B final remedial action
- 2. Phase B—consisted of hot spot containment and/or removal with treatability studies
- 3. Phase C—included dissolved-phase groundwater treatment with continuation of hot spot containment and/or removal.

The Phase C Remedial Action Work Plan for Test Area North Final Groundwater Remediation, Operable Unit 1-07B (DOE-ID 1999) required that the GWTF (or an alternate treatment system) be operated until the treatability studies could be completed and the Agencies could make a final decision on

the remedy for the "hot spot," that is the area nearest the TSF-05 injection well contaminated at levels greater than  $20,000 \mu g/L$  trichloroethene (TCE).

In November 1998, the Air Stripper Treatment Unit was put into service at a location downgradient from the hot spot, which allowed the GWTF to be put into standby mode while the field evaluation of in situ bioremediation (ISB) was conducted in the upgradient portion of the plume near TSF-05. The Air Stripper Treatment Unit was designed to be a temporary system and was later replaced by the New Pump and Treat Facility (NPTF). Based on the success of the field evaluation, the Record of Decision was eventually amended to specify ISB, NPTF, and monitored natural attenuation as the final remedy components (DOE-ID 2001). In October 2002, all filters were removed from the GWTF and the system was flushed with potable water until TCE concentrations in the effluent fell below detection limits. At that time, with agreement from the regulatory agencies, regular inspections of the system were curtailed.

### 3. REQUIREMENTS FOR DECONTAMINATION AND DISMANTLEMENT

The Remedial Action Work Plan (DOE-ID 1999) included specific requirements for final D&D and closure of the treatment system at the time that it was no longer required. The Remedial Action Work Plan specified that the facilities built to remediate OU 1-07B (i.e., all tanks, containers, piping, and equipment) were to be flushed with clean water to remove as much contamination as possible. The system was to be dismantled and decontaminated for reuse or was to be properly disposed of. The Remedial Action Work Plan stated that the site was to be returned to its preoperational condition to the extent feasible considering cost and intended future use. Monitoring wells still in use were to be left operational. The Remedial Action Work Plan also required that a more detailed D&D plan be developed to direct the work activities. The subsequent *Decontamination and Dismantlement Plan for the Groundwater Treatment Facility* (INEEL 2003) identified the tasks that were required to decontaminate and dismantle the GWTF. The project objectives of the D&D Plan were to:

- Eliminate potential safety hazards related to the GWTF equipment and components
- Remove the potential for exposure to hazardous and radioactive contaminants
- Package and dispose of all hazardous and radioactive waste located within the GWTF
- Remove the GWTF system, including all process piping, equipment, tanks, structures, and enclosures.

a. K. E. Hain (DOE), letter to W. Pierre (EPA) and D. Nygard (IDEQ), "Curtailment of Groundwater Treatment Facility Daily Inspections," EM-ER-02-173, October 15, 2002.

b. D. Nygard (IDEQ), letter to K. Hain (DOE), "Curtailment of Groundwater Treatment Facility Daily Inspections," EM-ER-02-173, October 23, 2002.

### 4. SUMMARY OF DECONTAMINATION AND DISMANTLEMENT ACTIVITIES

Planning and design for the GWTF D&D project began in September 2003. Field operations at the GWTF began in October 2003 and were completed in June 2004. All activities were completed 1 month ahead of the schedule, as identified in the D&D Plan (INEEL 2003). All work was performed in accordance with INEEL requirements and procedures, as outlined in the D&D Plan and in task-specific work orders prepared in compliance with INEEL work control requirements. In addition, safe work permits, job safety analyses, and radiological work permits were prepared to provide additional requirements and procedures for specific tasks. Project documentation (including the D&D Plan, hazard analysis, and the environmental checklist) was prepared and approved in accordance with the appropriate INEEL and Idaho Completion Project (ICP) procedures and policies.

All equipment was flushed, dismantled, and resized as necessary according to the Remedial Action Work Plan (DOE-ID 1999) and D&D Plan (INEEL 2003). Interior mechanical and electrical equipment, lighting, fire protection and alarm systems, accessible utility piping and associated equipment, and process piping inside the cargo containers were removed and disposed of (Figure 1). The holding tanks and associated piping were sized for disposal. The 20,000-gal tank was cut in half (horizontally) and used as a container for sized tank pieces and other debris (Figure 2). The total cost for the GWTF D&D project was approximately \$150,000. Appendix A provides a more detailed description of the D&D work activities.

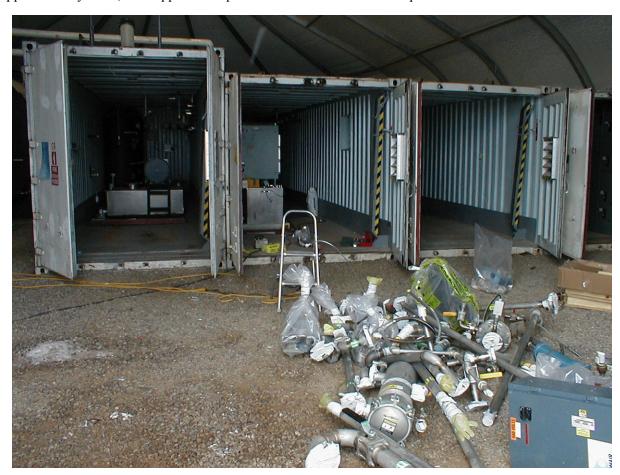


Figure 1. Dismantlement and removal of process equipment.



Figure 2. Waste debris temporarily stored in sized 20,000-gal holding tank.

During the project, personnel exposure to radiological and chemical hazards was minimized through the implementation of engineering and administrative controls, the use of personal protective equipment, and personnel monitoring. No exposures in excess of applicable permissible exposure and applicable action limits for any hazardous chemicals or materials resulted from the D&D operations. There were no recordable radiation exposures.

### 5. EQUIPMENT DISPOSITION

Equipment disposition involved characterizing, removing, packaging, and transporting all of the components and contents of the treatment system for appropriate disposal. Waste determination and disposition forms were prepared for all waste streams generated (Appendix B). The types of waste generated, their quantities, and final disposition are summarized in Table 1. The four generated waste streams included debris, sludge, resin, and water.

Table 1. Waste generated during Groundwater Treatment Facility decontamination and dismantlement activities.

Waste Type	Quantity	Disposition
Debris	$130 \text{ yd}^3$	ICDF
Sludge and tank bottoms	320 gal	ICDF
Ion exchange resin	7 gal	ICDF
Water	1,300 gal <sup>a</sup>	NPTF
a. The volume of water is approximated.  ICDF = INEEL CERCLA Disposal Facility  NPTF = New Pump and Treat Facility		

The debris generated during this project consisted of piping, flanges, pumps, valves, sized tank pieces, various metal pieces, poly tubing, wiring, personal protective equipment, plastic, and other small debris items. The debris was containerized into seven 20-yd³ roll-off metal containers. The debris was characterized as mixed low-level waste. Based on an evaluation of analytical data, process knowledge, and the potential for organic contamination still associated with these items, the waste was determined to meet land disposal restriction treatment standards and was direct disposed of at the INEEL CERCLA Disposal Facility (ICDF) in August 2004 (Appendix C). In addition to the roll-offs, debris also was packaged in one of the sized tank pieces and disposed of at the ICDF in September 2004 (Appendix C).

A mixture of scale and sludge was found in the bottom of GWTF Tanks T-1, T-2, and T-3 (Figure 3). Each of these tanks was cut horizontally and then had heat applied to them in order to thaw and melt ice that had accumulated in the bottom. Once the ice had melted, the residual water was pumped out of the tanks into a temporary poly tank and then re-processed through the NPTF. Absorbent was added to the remaining sludge to absorb any free liquids. The sludge was then transferred to containers and temporarily accumulated until sample analysis results were available. Based on results of the analysis, the sludge material was characterized as mixed low-level waste with TCE concentrations below the land disposal restriction treatment standard. This material was direct disposed of at the ICDF in August 2004 (Appendix C).

Ion exchange resin was frozen with rinse water inside various pieces of piping. In order to remove the resin, the piping was placed in secondary containment and heated to melt the ice. Once the ice had melted, the water was pumped out of the containment and re-processed through the NPTF. The resin was containerized and temporarily accumulated until the waste profile could be completed and the waste receipt scheduled at the ICDF. The resin material was characterized as mixed low-level waste and disposed of at the ICDF in August 2004 (Appendix C). All water that was generated from the flushing of the treatment system components was containerized and processed through the NPTF.



Figure 3. Sludge and scale being removed from the holding tank.

### 6. FINAL SITE CONDITION

All GWTF process tanks, piping, and components have been removed from the site. There is no GWTF-related equipment or debris remaining inside or outside of the Sprung® structure. Because there was no knowledge or visual evidence of leaks or spills that could have contaminated the underlying soil, confirmatory sampling was not required in accordance with the D&D Plan (INEEL 2003). The Sprung® structure itself will be relocated to support OU 1-10 field activities at TAN. Figures 4 and 5 illustrate the final condition of the GWTF.



Figure 4. Final site conditions inside the Groundwater Treatment Facility after decontamination and dismantlement activities.



Figure 5. Final site conditions outside the Groundwater Treatment Facility after decontamination and dismantlement activities.

### 7. CONCLUSION

All activities identified in the Remedial Action Work Plan (DOE-ID 1999) and D&D Plan (INEEL 2003) were successfully completed. The air stripper sump, auxiliary sump, multimedia filter, and cleanup system tank were disassembled, thoroughly cleaned, and properly disposed of. All interior mechanical electrical lighting, fire protection, process pipes, tanks, sumps, heating and ventilation systems, laboratory equipment, and other associated equipment were emptied, rinsed, and properly disposed of. Radiological screening was performed to ensure that all debris met applicable release limits. There is no knowledge or evidence of spills or leaks that could have contaminated the underlying soil. The Sprung® structure has been transferred to the OU 1-10 project and will be relocated for continued use. All applicable closure requirements under the Remedial Action Work Plan and D&D Plan have been met. Based on the information presented in this report, the former GWTF area is no longer considered a CERCLA area.

### 8. REFERENCES

- 42 USC § 9601 et seq., 1980, "Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA/Superfund)," *United States Code*, December 11, 1980.
- DOE-ID, 1995, Record of Decision Declaration for the Technical Support Facility Injection Well (TSF-05) and Surrounding Groundwater Contamination (TSF-23) and Miscellaneous No Action Sites Final Remedial Action, Operable Unit 1-07B, Waste Area Group 1, Document No. 10139, U.S. Department of Energy Idaho Operations Office, August 1995.
- DOE-ID, 1999, *Phase C Remedial Action Work Plan for Test Area North Final Groundwater Remediation, Operable Unit 1-07B*, DOE/ID-10679, Rev. 0, U.S. Department of Energy Idaho Operations Office, October 1999.
- DOE-ID, 2001, Record of Decision Amendment Technical Support Facility Injection Well (TSF-05) and Surrounding Groundwater Contamination (TSF-23) and Miscellaneous No Action Sites, Final Remedial Action, DOE/ID-10139 Amendment, Rev. 0, U.S. Department of Energy Idaho Operations Office, September 2001.
- INEEL, 2003, Decontamination and Dismantlement Plan for the Groundwater Treatment Facility, INEEL/EXT-03-00286, Rev. 0, Idaho National Engineering and Environmental Laboratory, September 2003.

### Appendix A

2004 Decontamination and Dismantlement Activities at the TAN-1748 Groundwater Treatment Facility

### Appendix A

### 2004 Decontamination and Dismantlement Activities at the TAN-1748 Groundwater Treatment Facility

### A-1. INTRODUCTION

This appendix provides a narrative of the decontamination and dismantlement (D&D) activities that were performed to close the Groundwater Treatment Facility (GWTF), Building 1748, at Test Area North (TAN) at the Idaho National Engineering and Environmental Laboratory (INEEL).

### A-2. Decontamination and Dismantlement Activities

This section describes the activities that were completed for project management (Section 2.1), project preparation (Section 2.2), site preparation (Section 2.3), removal of equipment and structures (Section 2.4), and site cleanup and demobilization (Section 2.5).

### A-2.1 Project Management

The management/engineering for the TAN-1748 D&D project was performed by the Inactive Sites Project under the Idaho Completion Project (ICP) directorate at the INEEL. The management planning and control approach was identified in Section 4 of the *Decontamination and Dismantlement Plan for the Groundwater Treatment Facility* (INEEL 2003).

The Inactive Sites project manager was responsible for the overall direction of the D&D Program at the INEEL. Engineering support was coordinated by the Inactive Sites project engineer with delegated responsibility provided by the TAN-1748 D&D task lead. Support for field activities was coordinated by the D&D field operations lead with delegated responsibility provided by the TAN-1748 field team leader (FTL).

The TAN-1748 D&D task lead was responsible for management and planning of all D&D work at the task site to ensure completion of the project within budget, on schedule, and in compliance with all safety and environmental regulations. The D&D task lead coordinated all document preparation, including planning, cost estimating, scheduling, and dealing with environmental and safety concerns. The D&D task lead also was responsible for tracking and reporting the progress and status of the project.

The TAN-1748 FTL was responsible for the safe and successful completion of the project by managing field operations and executing the work plan. The FTL was responsible for establishing and enforcing task site controls, documenting site activities, and conducting daily safety briefings. The FTL maintained the FTL logbook and site attendance log. The FTL supervised task site personnel, including crafts support assigned to the job. The FTL also interfaced with the field support organization, including the assigned industrial hygienist, safety engineer, fire protection engineer, radiological control support personnel, environmental support personnel, and Waste Generator Services personnel to accomplish the work activities.

Analyses of samples collected for characterization were performed by off-Site laboratories. The off-Site and on-Site Radioactive Materials Laboratory was used for radiological sample analysis. Detailed cost estimates and schedules were completed at the beginning of the project. The TAN-1748 D&D task lead was responsible for monitoring the actual costs and work performance as they compared to the planned estimate and schedule.

All work was performed in accordance with INEEL requirements and procedures, as outlined in the D&D Plan (INEEL 2003) and in task-specific work orders (WOs) prepared in compliance with INEEL work control requirements, including Standard (STD) -101, "Integrated Work Control Process." In addition, safe work permits, job safety analyses, and radiological work permits were prepared to provide additional requirements and procedures for specific tasks. Project documentation (including the D&D Plan, hazard analysis, and the environmental checklist) was prepared and approved in accordance with the appropriate INEEL and ICP procedures and policies.

### A-2.2 Project Preparation

Before D&D operations at TAN-1748 could proceed, numerous planning and preparation documents and determinations were required. The following sections describe the preparation documents that were completed before fieldwork was initiated.

### A-2.2.1 Davis-Bacon Determination

In compliance with Management Control Procedure (MCP) -2874, "Davis-Bacon Applicability Review Process," INEEL Form 431.38, "INEEL Davis-Bacon Committee Case Record," was submitted for a Davis-Bacon determination on the projected work scope for the TAN-1748 project (see Decision No. 03-109). The Davis-Bacon ruling determined that the TAN-1748 D&D project was noncovered work.

### A-2.2.2 Decontamination and Dismantlement Plan

The D&D Plan (INEEL 2003) identified specific project tasks and requirements for all D&D activities at the project site, outlined the general work scope and project objectives, and served as the primary project management plan. The D&D Plan contained specific requirements to carry out the work scope as well as project health and safety requirements.

### A-2.2.3 Hazard Classification and Safety Documentation

The D&D activity at TAN-1748 was designated as "not requiring additional safety analysis." Work was performed with no additional safety documentation required, beyond company procedures, in accordance with MCP-2451, "Safety Analysis for Other Than Nuclear Facilities." The controls to mitigate work hazards will be implemented through the use of WOs, radiological work permits, and other procedures and documentation that have been reviewed by qualified safety and health personnel. The project WOs and procedures will provide mitigation requirements for the project's hazards and risks.

Work by craft personnel was performed in accordance with STD-101, which provides the requirements for the Integrated Work Control Process (IWCP) at the INEEL. The IWCP is the method by which the Integrated Safety Management System and Voluntary Protection Program are implemented for maintenance and for construction projects. The IWCP establishes the process by which all maintenance work and project WOs for construction, deactivation, decontamination, decommissioning, and ICP work is screened consistently to uniform criteria to ensure that hazards are appropriately identified, analyzed, and controlled (PLN-1053). Work packages were written containing specific health and safety requirements. Safety personnel reviewed WOs, task documentation, procedures, and subcontracts to ensure that INEEL and Occupational Safety and Health Administration guidelines were properly incorporated. All D&D activities were conducted in accordance with prescribed safety procedures. In addition, safety personnel provided input and control through the approval of safe work permits. Radiological control support personnel controlled all work performed in radiologically contaminated work areas and verified that all radiological control rules and guidelines were followed.

### A-2.2.4 National Environmental Policy Act Documentation

In compliance with the requirements of the National Environmental Policy Act (42 USC § 4321 et seq.), an environmental checklist (INEEL Form 451.01) was prepared and approved for the TAN-1748 project (Environmental Checklist Document No. TAN-03-003). The proposed action qualified as a categorical exclusion under the National Environmental Policy Act.

### A-2.2.5 State Historic Preservation Document

Because TAN-1748 was not eligible for nomination to the National Register of Historic Places, a cultural/historic resources waiver was obtained before work began on TAN-1748.

### A-2.2.6 Work Orders

Each of the tasks performed at TAN-1748 was accomplished using approved WOs prepared in accordance with the requirements of STD-101. The WOs defined the work, required reviews, the job steps and the required actions to mitigate potential hazards, and access control interface requirements. Safety, environmental support, facility engineer, industrial hygiene, and radiological control support personnel—as well as the TAN-1748 D&D task lead, construction coordinator, and the facility manager—reviewed and approved the WOs as required.

Work performed at the task site included preparation of the following WOs:

- Minor Maintenance WO#-40509—to remove the Emergency Notification System speaker
- Planned WO#-74816—to remove interior equipment and components.

### A-2.2.7 Field Sampling Plan

Waste Generator Services generated a Field Sampling Plan as a guide for the collection of samples for laboratory analyses to use in material and waste characterization and disposal. The Field Sampling Plan provided guidance for obtaining representative, technically defensible data and maintaining sample integrity. Characterization efforts were performed by Waste Generator Services under Plan ESP-043-04.

### A-2.3 Site Preparation

Before removal activities were performed inside TAN-1748, D&D personnel set up the task site and mobilized equipment to perform the work. The work zone was set up using rope barriers and signs stating access requirements. No personnel were allowed inside the task site boundaries without first signing the attendance roster and wearing the appropriate personal protective equipment based on the expected hazards to be encountered. Original copies of the attendance roster were placed in the project data file to be archived.

Mitigation of biological hazards was implemented to protect the safety and health of workers during D&D activities that would disturb areas of rodent droppings. Mitigation included the spraying of bleach solution for rodent droppings and removal of rodent carcasses for possible hantavirus. The support of radiological control technicians on the TAN-1748 D&D project was instrumental in identifying contaminated conditions and contaminated areas during routine surveys. During the course of the project, a number of areas and pieces of equipment within the facility (i.e., interior of the three holding tanks and process piping) were surveyed and determined to contain radiological contamination.

### A-2.4 Removal of Equipment and Structures

Before removing any systems or equipment from the structure, workers verified that the equipment had been appropriately isolated and de-energized according to INEEL requirements and procedures.

The items removed and disposed of included:

- Interior mechanical and electrical equipment
- Lighting
- Fire protection and alarm systems
- Accessible utility piping and equipment
- Process piping inside the cargo containers.

The holding tanks and associated piping were sized and disposed of according to INEEL requirements and procedures. The 20,000-gal tank was cut in half (horizontally) and used as a container for sized tank pieces and other debris. The sea-land cargo containers were transferred to the Central Facilities Area to be reused, if possible.

### A-2.5 Site Cleanup and Demobilization

The management of waste generated during D&D operations was briefly discussed in the previous sections. Waste determination and disposition forms (Form 435.39) were prepared for all waste generated. Waste determination involved characterizing, removing, packaging, and transporting the waste to an appropriate disposal site in accordance with INEEL procedures and requirements. Waste Generator Services supported the completion of waste stream removal and disposal.

The original work scope of the D&D Plan (INEEL 2003) identified the removal of the treatment facility and the Sprung® structure. However, the end state was changed to leave the Sprung® structure intact to support ongoing Operable Unit (OU) 1-10 activities at TAN. Final project documentation has been completed, including this narrative and preparation of the final D&D project data files and photos for inclusion in the ICP optical imaging system for permanent record storage.

### A-3. CONCLUSION

The TAN-1748 process tanks, piping, and components have been removed and containerized for proper disposal at the INEEL CERCLA Disposal Facility. The Sprung® structure is intact and will be transferred to the OU 1-10 project for reuse. A project data package containing all project reports, work orders, procedures, and other documentation has been submitted to the INEEL ICP Administrative Record and Document Control for storage. The D&D project site photography was performed by project personnel. All photos will be retained as part of the project file.

During the project, exposures to personnel from radiological and chemical hazards were minimized through the implementation of engineering and administrative controls, the use of personal protective equipment, and personnel monitoring. The actual total project exposure was equal to 0 mR. No exposures in excess of applicable permissible exposure limits for any hazardous chemicals or materials resulted from D&D operations. No exposures in excess of the applicable action limits were detected. All field activities were completed ahead of schedule and under budget.

### A-4. REFERENCES

- 42 USC § 4321 et seq., 1970, "National Environmental Policy Act of 1969," *United States Code*, January 1, 1970.
- Form 431.38, 1999, "INEEL Davis-Bacon Committee Case Record," Rev. 2, Idaho National Engineering and Environmental Laboratory, October 1999.
- Form 435.39, 2000, "INEEL Waste Determination & Disposition Form (WDDF)," Rev. 4, Idaho National Engineering and Environmental Laboratory, March 2000.
- Form 451.01, 2004, "Environmental Checklist," Rev. 11, Idaho National Engineering and Environmental Laboratory, March 2004.
- INEEL, 2003, *Decontamination and Dismantlement Plan for the Groundwater Treatment Facility*, INEEL/EXT-03-00286, Rev. 0, Idaho National Engineering and Environmental Laboratory, September 2003.
- MCP-2451, 2001, "Safety Analysis for Other Than Nuclear Facilities," Rev. 2, *Manual 10B–Engineering and Research*, Idaho National Engineering and Environmental Laboratory, April 2001.
- MCP-2874, 2002, "Davis-Bacon Applicability Review Process," Rev. 3, *Manual 7–Project Management*, Idaho National Engineering and Environmental Laboratory, November 2002.
- PLN-1053, 2003, "Deactivation, Decontamination, and Decommissioning Project Manager's Handbook," Rev. 2, Idaho Completion Project, November 2003.
- STD-101, 2004, "Integrated Work Control Process," Rev. 16, *Manual 6–Maintenance*, Idaho National Engineering and Environmental Laboratory, August 2004.

### Appendix B

**Waste Determination and Disposition Forms** 

### NEEL WASTE DETERMINATION & DISPOSITION FORM (WUDF)

9210 3921

This waste was generated during the removal of the restin reterial from the ion exchange columns in the TAN Groundwater Treatment Facility (SWTF). The TAN GWTF is a purp and treat facility that was built to remediate groundwater plume caused by contamination in injection well TSF-65. The GWTF and its main processes are correctly being decomissioned. The TAN groundwater pumped through the ion exchange columns has been known to contain tickhorosthybore (TCE) from a fisted waste process prior to discharge to the groundwater. Therefore, the fon exchange columns are considered to be contaminated with the fisted waste and will carry the FCO1 listed waste code. Since the groundwater is also considered to be radiologically containated, this material is characterized as mixed low-level waste. TYes MING THA TY68 THO MANA MA INA TYes Min DINA M UNA ☐ Yes M No ☐ NA MYES LING LINA ☐ Secondary ☐ Multi-Layered 8. Wasta Characteristics: Note: The waste characteristics may not be known at time of initial determination. If required for treatment or characterization, those parameters will be Pager 7730 6324 I Yes 8-3719 L Yes Phone B-3461 Type/size: A Cree Time Only C On-going Material Profite Number: 1938A.F1 ☐ Gas Cylinder n. PCBs. If Yes, provide concentrations PCBs Bulk Product? (40 CFR 761.62)? (actual & source) in composition table. E-Mail harris izzolr p. Cyanîde > 250 mg/kg o. Sulfide > 500 mg/kg ☐ Aerosol r. Treatment Residue ECTION E PROCESS KNOWLEDGE EVALUATION (Completed by the generator with assistance from the Facility Representative) Area: OU 1-07B if applicable: Container #: t. Radiosciive s. Explosive q. Oxidizer S Solid C Organic Liquid C Aqueous Liquid C Studge awrence izzo Cleanup/Stabilization Activities tohn Harris 7. Sources used for process evaluation (e.g. MSDS, operational logs, procedures, analyses): analyses, process knowledge Charge #: 1003177GB 3. Were any waste minimization activities a part of this process: 

[] Yes 

[] No (If Yes, provide description or reference.] Variance N S S S TYes MIND TINA □ Yos ⊠No □ NA TYES MIND TINA MN INA TYes MINA LINA Technical Specialist: TAN Groundwater Treatment Facility Spent fon Exchange Resin T Yes □ Yes Independent Confact: Sords I. RCHA Debris (>60 mm) (> 50% by visual inspection) or non-RCHA Rubble k. Free liquids: If Yes, quentity . Pyrophoric (Water Reactive) 3940 9210 ¥ ☐ Routino operations Pager 6610 Building/Room: GWTF ☐ Yes ☐ No M NA j. Flammable Solid if yes, is it friable? 2. Process and Waste Description: (Allachment Included: [] Yes [K] Ne) Phone 6-2581 6-3093 lonelson E-Wall marlm 6. Physical Description (check all that apply): Color: black MNA ☐ Yes ☐ No 図 NA Ves | No MNA ☐ Yes ☐ No SANA X Extaling 1. Waste Generalion Location: Facility. TAN Welfrod Method ☐ Anticipaled TAN-500 MMX Liquids Exact c. Total suspended solids <1% 5. Other generation information: d. Is total organic carbon <1% Marshall Mado WDDF Number (Optional): e. Furning Acid/Acid Gases Pyrophoric (Air Reactive) es Nelson General Instructions: Waste Stream Namo: Waste Stream Conlacts identified of a later date. 4. Generation Stalus: | > 2 or < 12.5 | D. Flash Point; Facility Rep.; 03/03/2000 Generator Contact: Rev. 04 435.39 810/100.9 70F-58-5004 E-152 762-L FROM-12:31

### INCEL WAS IE DEJERMINATION & DISTUSITION TOTAL (WILD')

03/03/2000 Rev. 04 ☐ Yes 図No ☐NA

fumber: 1938A.R1

Commonts

Waste Stream Name:	TAN Groundwater Treatment Facility Spent Ion Exchange Resim	Iment Facil	ity Spent	ion Excha	nge Re	Sir	M	Material Profile	0
g. Water Roadive	☐ Yes ☐ No 図 NA m Pyrophofic (Air Reactive)	m. Pyrophar	to (Air Read	(avg	N/88	☐ Yes No ☐ NA U. Helogens (Cl. F, Br)	u, Hak	gens (Cl. F.	2
11. Waste Composition: (N	1. Waste Composition: (Must tolal 100%). Attachment Included:   Yes   No   No	Included: []	Yes (No	AN D					1
Cons	Constituent	CAS No.	Analysis or PX	(if constitu	ent is <	Analysis (if constituent is <1%, use mg/kg or mg/t, Gred as a or P.K. To Units (Y/N)	formgit. Units	Used as a Solvent? (Y/N)	
Resin material			PK	76	_	66	%w4	2	
Aquasol Absorbent			P.	-		9	%wt	z	
Kinwipss and sample lars			РК	0		2	Swit	z	
					H				

l certify that the information in Section Lot fels form and the applicable attachments are fully disclosed. A good faith effort has been put forward to acquire and verify the information. Whitel or deliberate confissions have not been made, and all known and suspected hazards have, to the best of my knowledge, been identified. The WOS Facility Representative, based on information provided, has assigned a probable waste type in Section II. CERTIFICATION 1

40/11/	, Dalle	1/23/03	L Dåve
11/11/11	sentends )	mell much	WGS Facility Representative Signature
Lee Netson	Generator Name Types@Printed	Marshalf Marlor	WGS Facility Representative Name Typed/Printed

1

SECTION II: PROBABLE WASTE TYPE: (Completed by the Facility Representative and used to assign waste technical specialist and for appropriate management until final waste

12. Fadiolectopes: Are radiolectopes present? 🔯 Yes, 11 Yes, refer to estachment 📋 No, 11 No, Include algned form 435.02.

Based on avaluation of the process and available data the weste type indicated is (check all that apply):

determination is made.)

□ Used O

☐ Other -- Detroibe:

TSCA

☐ Non-conditional Industrial

M Mexed

Hazardous Only
Material Exchange

(ndicated Waste Codes: F001

☐ Radioactive Only

Conditional Industrial

☐ Recyclable: ☐ Non Radioactive Lead (>99+% Lead) ☐ Lead Batteriex ☐ Silver ☐ RCRA Scrap motal ☐ Other-Coscribe:

# INEEL WASTE DETERMINATION & DISPOSITION FORM (WDDF)

435.39 03/03/2000 Rev. 04

SECTION III WASTE DETERMINATION AND DISPOSITION (Completed by the WGS Technical Specialist)	nikal Specialist)
A. Waste Determination	
1. Is this a solid waste (per 40 CFR 261.2)? X Yes No (If No. attach regulatory chation)	
2. Is this a Hazardous Washe (per 40 CFR 261.3)? N Yes No	
3. is waste excluded from regulation under 40 CFR 261.4?   Yes   Mo   If Yes, Regulatory chatton;	iny chation:
4. Is waster subject to 40 CFR 288 regulations? 18 Yes 1. No 11 Yes, is the waste at 1. Waste a specified method of treatment? 1. Yes 18 No 11 Yes, list the specified method:	If Yes, is the waste a:   Waste Water or M Non Wastewater.
5. Is waste listed in Subpart D of 40 CFH 2617 (2) Yes I No (If Yes, provide waste codes, regulated hazardous constituent(s), and an explanation of determination.) Attachment included: I Yes IX No Codes: This waste is F001 listed for Trichfored tylene (TCE). Process knowledge and analytical results have shown TCE occurring in the ground water in amounts as much as 32 ppm. Analytical data obtained from sampling. Process knowledge indicates the source of the TCE is a spent solvent used in riegreasing.	regulated hazardous constituent(s), and an explanation of determination.) where (TCE). Process knowledge and eneightical results have shown TCE occurring in the was knowledge indicates the source of the TCE is a spent solvent used in degreasing.
6. Is waste characteristic per Subpart C of 40 CFR 2617   Yes XI No (if Yes, provide waste codes, regulatory subcategory, and an explanation of determination.) Attackment included: [] Yes   No Codes:	raste codes, regulatory subcategory, and an explanation of determination.)
7. If hazzardous, is the waste excluded for recycling to accondance with 40 CFH 261.2(e)(1)? [] Yes [3] No	☐ Yes ☒ No If Yes, regulatory Ghation:
8. In the waste mixed or low level? 🗵 Yes 🗌 No. (If Yes, Include attachmant with isotopic information.)	
Hing? PCBs: [] Yes M No	Asbestas: 🗌 Yes 🖾 No
B. Evaluation of Underlying Hazardous Constituents (UHCs)	
Does the waste require evaluation in accordance with 40 CFH 268.487 📘 Yes 🔯 No (If Yes, identify LIHCs.) LIHCs:	Yes, identify UHCs.) UHCs: Attachment included: U Yes UNo
C. Disposition and Data Gap Evaluation: (Attachment included: 🗌 Yes 🛛 No)	
1. Proposed Disposition (storage, treatment, disposal pathway): Land Disposal at Private Sector Subbille C Landtill or the INEEL CERCLA Disposal Facility (ICDF).	ctor Subtile C Landfill or the INEEL STP ID (mixed only); ID-CERCLA-MV
2. Will this waste be treated in a <90 storage area? [I Yes   X No (II Yes, affect plan.) (Mixed and Hazardous Only)	ted and Hazardous Only)
3. is the information provided adequate for complete waste determination, management, transportation, treatment, and disposal of waste? [2] Yes [1] No If No, identify additional information or analysis required.	reportation, treatment, and disposal of waste? 🔯 Yes 📋 No If No, identity additional
D. Verification requirements: (Attachments included: 🗍 Yes 🐹 No)	
1. Will verification be performed on this waste? 🗌 Yes. 🔯 No. II Yes, describe the verification to be performed.	on to be performed,
`	
At Initial Storage Location: Tives M No	Immediately Prior to Shipment:   Yes   No
2. What is the verification frequency?	

an put forward to acquire	And a DOT Chandaland Management Material? Type The West DOT Printery He	E. Packaging and Transportation Requirements (to be completed by P&T): Complete this section only if wastes are to be fransported	ansported.	
Note Information (special shipping exception (PSN, Hazard Clease, DOT 10 #, PG):    Contribute Static Description (PSN, Hazard Clease, DOT 10 #, PG):   Contribute Static Description (PSN, Hazard Clease, DOT 10 #, PG):   Contribute Static Description (PSN, Hazard Clease, DOT 10 #, PG):   Contribute Static Description (PSN, Hazard Clease, DOT 10 #, PG):   Contribute Information (PSN, Hazard Clease, DOT 10 #, PG):   Contribute Information (PSN, Hazard Clease, DOT 10 #, PG):   Signature   Packaging & Transportation   Packaging & Transportation   Packaging & Transportation     Note   Transportation   Packaging & Transportation   Packaging & Transportation     Signature   Packaging & Transportation     Signatu	.00.		OT Subsidiary Hazard:	
Totable Basic Description (FSN, Hazard Clase, DOT 10 #, PG):    Confidence are already generated, are they packaged correctly for the DOT hazard class?   Yes   No   No   Internation (special shipping coordinary, are);	ommended Packaging:			
The information (special shipping coordinates are already generated, are they packaged correctly for the DOT hazard class?     Containers are already generated, are they packaged correctly for the DOT hazard class?    Containers are already generated, are they packaged correctly for the DOT hazard class?    Containers are already generated, are they packaged correctly for the DOT hazard class?    Containers Transportation   Packages & Teamportation	sable Basic Description (PSN, Hazard Class, DOT 10 #, PG):			
Toolsainers are already generated, are they packaged correctly for the DOT hazard clase?     Packaging & Trensportation   Packaging & Trensportation   Packaging & Trensportation	ir Information (special shipping conditions, etc.):			
Packaging & Transportation   Packaging   Packag	ntainers are already generated, are they packaged correctly for the DOT hazard class? 🗌	es [] No If No, list confainer rec	quired.	
Third of Waste Determination: History shows and the applicable attachments are fully disclosed and accurate. A good faith effort has been put ferward to acquire and verify the maticin. Willful or deliberate emissions have not been mede, and all threwn and euspecied hazards have. To the best of my knowledge, been identified.    CERTIFICATIONS	Packaging & Viansportation Name Typed/Printed	Packaging & Transportation Signature		Dale
CERTIFICATIONS  CONTROL IN Section III of this form and the applicable attachments are fully disclosed and accurate. A good faith effort has been put forward to acquire and verify th the acquire and all known and europeaced have, to the best of my knowledge, been identified.  WGS Technologies, been identified.  WGS Technologies, been identified.  WGS Technologies, been identified.  CARALLA COMMISSION AND ACCOUNTS TO AC	Hazardous (see codes listed above)	- tow-tovel		liver (describe)
WGG Technical Specialist Signature 1/22/03  Than Signature WGS Independent Herlewer Signature Lew Love Love Weste Herland Weste Herland Signature	I make the association of the pass and the appropriate engineers are not one whiter. Willful or deliberate omissions have not been mede, and all snown and euspected hy	cards have, to life best of my know	redge, been identified.	[/23/03
Signature  1/2.1/0.1	LINCO T. A. C. L. C.	UCA Tachelest Specialist	-	Clean
WGS Independent Reviewer Skynstere Skynstere Skynstere I Low Level Westo Hazanious Wasto Delerrihation Favlaw Signature		Separate Per Teleco		1/23/03
ninefort Beview Name Low Lovel Westo Hazandous Wasto Determination Fortaw Signature		WGS Independent Herlower Skynstere		Date
Mignal Narrative Information (As Naoded):		Lovel Westo Hiszanious Wasto Delent Signahan	ringtion Fortaw	Data
	naf Narrative Information (As Neoded):			

# INEEL WASTE DEJERMINATION & DISPOSITION FORM (WUDT)

03/03/2000 Rev. 04 General Instructions:

TAN GWTF LDR compliant sludge Naste Stream Name:

Material Profite Number: 4304N

2510

O Yes ⊠ No □ NA □ Yes ⊠ No □ NA This waste steam is comprised of sludge and sediment from the TAN Groundwater Treatment Facility (GWTF). This studge came from the bottom of three different tanks in the GWTF. The tanks, along with the other GWTF components such as piping and cargo containers, were removed as part of a D&D action in February 2004. The material was removed from the tanks prior to decommissioning of the tanks. The groundwater that was stored in these tanks carries a RCRA listed waste code of F001 for Trichloroeithylene (TCE). It is also considered radioactively contaminated, and therefore is considered mixed tow-level waste (MLLW). This studge will also carry the same F001 code and be considered MLLW. Com cob absorbent material was used in the removal of this studge to absorb any free liquids in the tanks. Small pieces of debris, such ☐ Yes ⊠No ☐ NA ☐ Yes ⊠No ☐ NA 9210 MNO ONE ☐ Secondary ☐ Gas Cylinder ☐ Multi-Layered Since the levels of TCE in this waste stream are below the LDR treatment standard of 6 ppm, this waste will be LDR compliant and eligible for direct disposal. The planned 8. Waste Characteristics: Note: The waste characteristics may not be known at time of initial determination. If required for treatment or characterization, those parameters will be identified at a later date. Pager 7730 5324 □ Yes Phone 8-3719 6-3481 Type/size: One Time Only On-going n. PCBs: if Yes, provide concentrations (actual & source) in composition table. PCBs Bulk Product? (40 CFR 761.62)? E-Mall harris zzoir ₹ p. Cyanide ≥ 250 mg/kg ☐ Aerosol o. Sulfide > 500 mg/kg r. Treatment Residue SECTION I: PROCESS KNOWLEDGE EVALUATION (Completed by the generator with assistance from the Facility Representative) Area: OU1-07B | | Papplicable: Container#: q. Oxidizer Sludge 🛛 John Harris Larry fzzo Were any waste minimization activities a part of this process; 🗌 Yes 🛭 No. (If Yes, provide description or reference.) Charge #: 100667343 Name N SN N SN N SN Nes ⊠ No □ NA ☐ Yes ⊠ No ☐ NA Nes ⊠No □NA Solid Organic Liquid Aqueous Liquid 3940 Technical Specialist: Sources used for process evaluation (e.g. MSDS, operational logs, procedures, analyses): Analytical data Independent O Yes Reviewer: Contact: Solids ☐ Yes ☐ No ☒ NA k. Free iquids: If Yes, quantity . Pyrophoric (Water Reactive) 9210 MS ☐ Routine operations Other generation information: This waste stream has been already generated. Pager 6610 . Flammable Solid If yes, is it friable? Building/Room: N/A 2. Process and Waste Description: (Attachment Included: Tyes [3] No) vetume % Phone 6-2581 8.3093 h. Asbestos: pathway for this waste is direct disposal at the ICDF lands!!. coelego E-Wall marlm as PPE, are also mixed in with this waste stream. MINA □ Yes □ No 図NA Existing
 Existing
 ■ Nes □ No ⊠ NA Physical Description (check all that apply): Color: TAN-670 . Waste Generation Location: Facility: TAN Method: ☐ Anticipated Total suspended solids <1% Exact Liquids d. Is total organic carbon <1% Facility Rep.: Marshall Martor ADDF Number (Optional): e. Furning Acid/Acid Gases Lee Nelson Waste Stream Contacts . Generation Status Name pH (aqueous only): ] < 2 | 2 12.5 ] > 2 or < 12.5 Flash Point: Generator: Contact:

...... 10401 DETERMINATION & DIOCESTON TORM (WDOT)

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Waste Stream Name:	TAN GWTF LDR compliant sludge	iant sludge					Ma	terial Profile P	Material Profile Number: 4364N	
f. Pyrophoric (Air Reactive)	☐ Yes ☐ No 図NA	i. RCRA Debris (>60 mm)	nris (>60 mn	(u	☐ Yes ☑	☐ Yes ☑ No ☐ NA	s. Explosive	sive		TYES No   NA
		(2 50% by visual inspection) or non-RCRA Rubble	Sual Inspec	rou) or	□ Yes Ø	□ Yes ⊠ No □ NA	L Radioactive	active	×	☑ Yes □ No □ NA
g. Water Reactive	☐Yes ☐ No 図NA	m. Pyrcphoric (Air Reactive)	ic (Air Reac	(ByB)	☐ Yes 🗵	No   NA	u. Halo	u. Halogens (Cl. F. Br)		☐ Yes ☑ No ☐ NA
9. Waste Composition: (Must total 100%	total 100%). Attachment included:     Yes   No	cluded: [] Y	oN ⊠ se	N D						
Constituent	rent	CAS No.	Analysis or PK	(if constitu	Ray uent is <1% otherwise T	Range (If consituent is <1%, use mg/kg or mg/L, otherwise report in %) From To Units	or mgrl., Units	Used as a Solvent? (Y/N)	Comments	ents
TCE		79-01-6	Analysis	0	0.0	0.026 n	mg/kg	>		
solids		NA	Ϋ́	93	8	v 26	% Jon	z		
small debris		NA	¥	0		2 ,	% jox	z		
com cob absorbent		NVA	PK	3		,	% jox	z		
10 Barbalantase: Are callulantase areasant? [X] Ves. If Ves. refer to altachment	Manage present Nac	If Yost color?	alfachme	N C	II No tock	No. 18 No include stood form 435 02	m 435 G	<del> </del>		
10. Kadloisotopes: Are radiosotopes pre- SECTION II: PROBABLE WASTE TYPE: determination is mede.)	STE TYPE: (Completed by	If yes, roler the Facility R	o attachme tepresentati	we and use	od to assign	wasta tochi	ical speci	alist and for app	end r ky ves, in ves, orier to attachment L No, in No, include signed form 435.02 (Completed by the Facility Representative and used to assign waste technical specialist and for appropriate management until final waste	nt until final waste
Based on evaluation of the process and available data the waste type indicated is (check all that apply):	icess and available data the	waste type is	ndicated is	(check all I	hat apply):					
☐ Hazardous Only	Mixed ⊠		☐ Radioactive Only	the Only		Ö	Conditional Industrial	Industrial		□ Used Oil
☐ Material Exchange	☐ Lab Pack		☐ Non-conditional Industrial	diffonal in	dustrial	□ TSCA	SCA	Other - Describe:	scribe:	
☐ Recyclable: ☐ Non Radioactive Lead (>99+ % Lead)	oactive Lead (>99+ % Lead	) 🛘 Lead Batteries		Silver	] RCRAS	☐ RCRA Scrap metal ☐ Other - Describe:	□ Other	- Describe:		
ndicated Waste Codes: F001				CERTIFICATION	MOITA					
I certify that the information in Section I of this form and the applicable attachments are fully disclosed. A good faith effort has been put forward to acquire and verify the information. Willful or deliberate omissions have not been made, and all known and suspected hazards have, to the best of my knowledge, been identified. The WGS Facility Representative, based on information provided, has assigned a probable waste type in Section II.	Section I of this form and the have not been made, and a ssigned a probable waste to	e applicable all known and ype in Section	attachments suspected I	are fully of	Isclosed.	l good faith e est of my kn	iffort has b	seen put forward seen Idenlified.	to acquire and verif The WGS Facility R	y the information. tepresentative, bas
	Lee Nelson			4	Hours &	to.	2	then for 1	Lee William for tilling Sugar	Nº/81/5
0	Generalor Name Typed/Printed					1	Skynahura			Date
2	Marshall Martor			4	1	1	17.17	1		5/18/04
WGS Facil	WGS Facility Representative Name			10000		WGS Facility Representative	ty Represe	ntative		Date

# WAS . E CE . ERMINATION & DISTUSTION FORM (WOOF)

SECTION III WASTE DETERMINATION AND DISPOSITION (Completed by the WGS Technical Specialist)		_
A. Waste Determination		
1. Is this a solid waste (per 40 CFR 261.2)? Si Yes I No (If No, attach regulatory citation)		_
2. Is this a Hazardous Waste (per 40 CFR 261.3)? 🖾 Yes 🗆 No		_
3. Is waste excluded from regulation under 40 CFR 261.4? 🗌 Yes. 🖂 No. If Yes, Regulatory citation:		_
4. Is waste subject to 40 CFR 268 regulations? XI Yes INo If Yes, is the waste at III Waste Water or XI Non Wastewater. Is there a specified method of treatment? II Yes XI No If Yes, list the specified method:		_
5. is waste listed in Subpart D of 40 CFR 2617 🔯 Yes 🗌 No. (If Yes, provide waste codes, regulated hazardous constituent(s), and an explanation of determination.)  Attachment included: 🔲 Yes 📋 No. Codes: F001. This waste is F001 listed for Trichloroethytene (TCE). TCE has been detected in the TAN groundwater at concentrations up to 32 ppm. However, analytical data shows the levels of TCE are below LDR regulatory limit of 6 ppm.	oncentrations up	
6. Is waste characteristic per Subpart C of 40 CFR 261? ☐ Yes ☒ No (If Yes, provide waste codes, regulatory subcategory, and an explanation of determination.) Attachment included: ☐ Yes ☒ No Codes:	3	
7. If hazardous, is the waste excluded for recycling in accordance with 40 CFR 261.2(e)117. ☐ Yes ☑ No. If Yes, regulatory Citation:		-
8. Is the waste mixed or low level? No (If Yes, Indude attachment with Isologic Information.)		-
9. is waste TSCA regulated for either of the following? PCBs:   Yes   No Asbestos:   Yes   No		-
B. Evaluation of Underlying Hazardous Constituents (UHCs)		-
Does the waste require evaluation in accordance with 40 CFR 268.487 🗌 Yes 🔯 No (If Yes, Identify UHCs.) UHCs: Attachment Included: 🗍 Yes 🔯 No	No	_
Ç. Disposition and Data Gap Evaluation: (Attachment Included:     Yes   No)		
1. Proposed Disposition (storage, Irealment, disposal pathway): Direct disposal at ICDF	CLA-MW	-
2. Will this waste be treated in a <90 storage area? ☐ Yes ☑ No (If Yes, attach plan.) (Mixed and Hazardous Only)		-
3. Is the information provided adequate for complete waste determination, management, transportation, treatment, and disposal of waste? 🛛 Yes 🗔 No 1f No. Identify additional information or analysis required.	nify additional	
D. Verification requirements: (Attachments Included: 🔲 Yes 🔯 No)		_
1. Will verification be performed on this waste? N Yes. No If Yes, describe the verification to be performed. ICDF verification sampling		_
At Initigal Storage Location:   Yes No		
2. What is the verification frequency? one-time		

THE MANUE DETERMINATION & DISTOCUTOR FORM (WDDP)

1 is weets a DOT Regulated Histoardous Material?   Tives   DNO Primary Hazard:   DOT Subsidiary Hazard:   DOT Subsidiary Hazard:   DOT Subsidiary Hazard:	_	E. Packaging and Transportation Rec	equirements (to be complet	Packaging and Transportation Requirements (to be completed by P&T): Complete this section only if wastes are to be transported.	ly if wastes are	to be transported.		
Exportmented beckelighed	-	1. Is waste a DOT Regulated Hazardous	us Material? ☐ Yes ☐ No	1		DOT Subsidiary H	lazard:	
Summary of Waste Determination. Section II of this form and the applicable alternments are information (special shelping conflictions, etc.):    Full Containers are strongly generated, are they peckaged correctly for the DOT hazard class? □ Vee □ Ne Work list container required.   Full Containers are strongly are information (are believe)   □ Hazardous (see codes (are co		2. Recommended Packaging:						
Control information (special shipping conditions, etc.)	.,	3. Probable Basic Description (PSN, Hau	azard Class, DOT ID #. PGk					
St if conclinens are already generated, are they packaged correctly for the DOT hazard class?   Vee   No. list container required.   Packaging & Temportation   Name Typeratrials   Name of the codes   Name Typeratrials   Name	4	<ol> <li>Other information (special shipping co</li> </ol>	conditions, etc.):					
Summary of Waste Determination:   Fracegoog & Transportation   Name TypedPrinted		5. If containers are already generated, a	are they packaged correctly t		o If No, list conta	siner required.		
Summary of Wasto Determination: Hazardous (see codes listed above)  CERTIFICATIONS  CERTIFICATIONS  Certify that the information in Section III of this form and the applicable attractments are fully disclosed and accurate. A good faith effort has been put forward to acquire and verify it information. Willful or deliberate omissions have not been made, and all known and suspecied hazards have, to the best of my knowledge, been identified.  VICS Technela Specialist Name  VICS Technela Specialist  VIC	1	Packaging & Tran Name Typedir	nsportation /Printed		Packaging & Trans Signature	portation	Dat	9
CERTIFICATIONS   Certify that the information in Section III of this form and the applicable attachments are fully disclosed and accurate. A good faith effort has been put forward to acquire and verify it information. Willful or deliberate emissions have not been made, and all known and suspecied hazards have, to the best of my knowledge, been identified.    WOS Technical Specialist Name			Hazardous (see codes (sted above)	Mixed Low-Level (see codes listed above)	1	Conditional Industrial	Other (describe)	
Name  Signature  Signa		cziwal	20	Law and			5/13/04	a
Acry Level Waste Hazardous Waste Determination Review Signature	1	WGS Technical Spe	ocialist Name	and of an	WGS Technical Sp	pedalist	Dat	op op
Name Signature		meH adol	No.	Jun l. C.	oho Herri			104
ination Review Name Signature	1	WGS Independent Re TypediPrint	Reviewer Name nted	A	VGS Independent	1		9
Additional Narrative Information (As Needed):  The waste will at least need to be repackaged for shipping. The bottles containing the sludge are loose inside a 55 gallon drum.	0 0 400	Low Level Waste Hazardous Waste I	3 Determination Review Name	Low Level Wast	e Hazardous Wast	e Determination Review	Det	
The waste will at least need to be repackaged for shipping. The bottles containing the sludge are loose inside a 55 gallon drum.	-	Additional Narrative Information (As Nee	edect):		,			
		The waste will at least need to b	be repackaged for shipping.	The bottles containing the sludge are lo	ose inside a 55 g	gallon drum.		
		1						

## WOLL WILL WILL AND THE BUSINESS OF THE PROPERTY (WILLY)

General Instructions:

03/03/2000

O Yes No O NA No ON MA 9210 3921 potential for organic contamination still associated with these items; the waste is determined to meet LDR treatment standards (see attached comments and hard copy profile for No | NA Ves ⊠ No □ NA ☐ Secondary Treatment Facility (GWTF) tent, and contaminated debris from the In Situ Bioremediation (ISB) field laboratory. This work was performed under a CERCLA remedial action for Sources used for process evaluation (e.g. MSDS, operational fogs, procedures, analyses): Analytical data! L&V/ closure reports, ASAP's, process knowledge (see attached sheets). Solid Organic Liquid Aqueous Liquid Studge Aerosol Osas Cylinder Multi-Layered source, the contaminated groundwater at TAN, and therefore carries the F001 RCRA listed code. However, based on evaluation of analytical data, process knowledge, and electrical witing and cabing, poly tubing, carboys, empty bottles, sampling equipment, PPE, rags, and wipes. This debris came into direct contact with an F001 listed waste supporting documentation). Since the ground water that these items came into contact with is radiologically-contaminated, this debris is being managed as mixed low-level Pager 7730 Operable Unit 1-078. Wastes include re-sized tanks, piping (carbon steet, galvanized, PVC, and stainless steet), valves, pumps and parts, flanges, fittings, plastic hoses, 5324 8. Waste Characteristics: Note: The waste characteristics may not be known at time of initial determination. If required for freatment or characterization, those parameters will be This waste stream consists of LDR compliant debris generated during the maintenance and installation of TAN ground water walls, decommissioning the Ground Water Nes □ Phone 6-3719 6-3461 Fype/size: One Time Only N On-going faterial Profile Number: 2473.R1 n. PCBs: If Yes, provide concentrations (actual & source) in composition table. PCBs Bulk Product? (40 CFR 761.62)? Parris E-Mail izzolr p. Cyanide > 250 mg/kg o. Suffde > 500 mg/kg If applicable: Container #: NECTION I: PROCESS KNOWLEDGE EVALUATION (Completed by the generator with assistance from the Facility Representative) Q. Oxidizer waste. Inorganic TCLP metals analysis was also performed, concentrations detected were below RCRA regulatory levels. John Harris Larry Izzo Charge #: 100867343 3. Were any waste minimization activities a part of this process: <a> Yes</a> No (If Yes, provide description or reference.) Name ¥ 8 □ 8 ⊠ □ □ Yes ⊠ No □ NA □ Yes ⊠ No □ NA Technical Specialist: Area: OU1-07B O Yes Independent Contact Reviewer Solids 3940 9210 . Pyrophoric (Water Reactive) WS Routine operations Pager 6610 Building/Room: GWTF ☐ Yes ☐ No ☒ NA II. Flammable Solid ☐ Yes ☐ No ☒ NA h. Asbestos: If yes, is it friable? 2. Process and Waste Description: (Attachment Included: 🛛 Yes 📋 No) Phone 6.2581 6-3093 OU1-7B LDR Compliant Debris Nonelson E-Mail marimi NA 🛛 Existing
 Existing
 ■ Physical Description (check all that apply): Color: INEEL/EXT-03-00286 Rev.0 section 5.5 TAN-637 . Waste Generation Location: Facility. TAN Method: Method: ☐ Anticipated Exact NA NA c. Total suspended solids <1% Liquids Other generation information: d. Is total organic carbon <1% Marshall Marior WDDF Number (Optional): Lee Nelson Waste Stream Name: Waste Stream Contacts identified at a later date Generation Status: Name pH (equeous only): ] < 2 □ ≥ 12.5 > 2 or < 12.5 Facility Rep .: Generator: Contact:

TOUR MANDE OF DESCRIPTION ( COM ANDER)

Useus/zouto Rev. 04

The second secon										
e. Fuming Acid/Acid Gases	☐ Yes ☐ No ⊠ NA	k. Free liquids: If Yes, quantity volume %	ds: If Yes, q.	rantity	□ Yes	Yes ⊠ No □NA	1	r. Treatment Residue		☐ Yes ☐ No ☐ NA
f. Pyrophoric (Air Reactive)	□ Yes □ No MA	I. RCRA Debris (>60 mm)	ris (>60 mm	(-	⊠ Yes [	O No D NA	A S. Explosive	osive	7	JYes ⊠No □NA
		non-RCRA Rubble	sual inspect	non) or	□ Yes [	No □ NA	L. Radioactive	sactive	<u>a</u>	N Ves □ No □ NA
g. Water Reactive	☐Yes ☐ No 図 NA	m. Pyrophoric (Air Reactive)	ic (Air React	live)		No □NA		u. Halogens (CI, F, Br)		☐ Yes ⊠ No ☐ NA
11. Waste Composition: (Must total 160%). Attachment Included:   Yes	tal 160%). Attachment h	ncluded: 🗆 🕽	res No	NA D						
Consiluent		CAS No.	Analysis or PK	(If constit	Rautis <19 otherwise	Range (if constituent is <1%, use mg/kg or mg/L, otherwise report in %)	or mg/L,	Used as a Solvent?	Comments	ents
				From		To	Units	Tana I		
carbon, galvanized, pvc, and stainless steel piping and parts of various dimensions	lless steel piping and		PK	82		06	wt%	z		
carboys or empty containers, electrical cords, cables and fittings, HDPE Plastic	trical cords, cables		¥	2		10	wt%	z		
PPE, wipes, tape, bag filter rings, buckets, prastic bottles and rubber Hose.	buckets, plastic bottles		PK.	5		10	wt%	z		
pumps, flanges, valves		Lance Application	Æ	9		10	w4%	z		
TCE		79-01-6	УK	0	0	0.91	mdd	>		
absorbent material			ЬК	10.01	0	0.02	ww.%	z		
12. Radiolsotopes: Are radiolsotopes present?	1000	Yes, If Yes, refer to attachment □ No. If No, include signed form 435.02	attachmen	No.	Jf No. inck	ude signed fo	nm 435.02			
SECTION II: PROBABLE WASTE TYPE: (Completed by the Facilty Representative and used to assign waste technical specialist and for appropriate management until final waste determination is made.)	ETYPE: (Completed by	the Facility R	epresentativ	e and use	d to assign	n waste tech	nical specia	alist and for a	appropriate managemen	tuntil final waste
) ased on evaluation of the process and available data the waste type indicated is (check all that apply):	s and available data the	waste type in	dicated is (c	theck all th	sat apply):					
☐ Hazardous Only	Mixed ⊠	_	☐ Radioactive Only	tive Only			Conditional Industrial	Industrial		□ Used Oil
☐ Material Exchange	☐ Lab Pack		☐ Non-conditional Industrial	ditional loc	dustrial		□ TSCA	☐ Other - Describe:	- Describe:	
☐ Recyclable: ☐ Non Radioaclive Lead (>99+ % Lead)	live Lead (>99+ % Lead)		afteries	Silver	] RCRAS	☐ Lead Baltenies ☐ Silver ☐ RCRA Scrap metal ☐ Other - Describe	□ Other	- Describe:		

107-56-2004 15:34

Loentify that the information in Section Fof this form and the applicable attachments are fully disclosed. A good faith effort has been put forward to acquire and verify the information. Willful or deliberate omissions have not been made, and all known and suspected hazards have, to the best of my knowledge, been identified. The WGS Facility Representative, based on information provided, has assigned a probable waste type in Section II. Lord & For Lee Nelson for telecon 2/18/04 the state of the state of WGS Facility Representative Signature . CERTIFICATION : **OU1-7B LDR Compliant Debris** Marshall Marlor WGS Facility Representative Name Typed/Printed Lee Nelson Generator Name TypetiPrinted Waste Stream Name: 03/03/2000 Rev. 04 810/110 d E-152 161-1

3/18/64 Date

Material Profile Number: 2473.R1

FROM-98:91 7002-93

03/03/2000 Rev. 04

SECTION III WASTE DETERMINATION AND DISPOSITION (Completed by the WGS Technical Specialist)	al Specialist)
A. Waste Determination	
1. Is this a solid waste (per 40 CFR 261.2)? M Yes No (If No, attach regulatory citation)	
2. Is this a Hazardous Waste (per 40 CFR 261.3)? 🖂 Yes 🗌 No	
3. Is waste excluded from regulation under 40 CFR 261.4?   Yes No II Yes, Regulatory citation:	olation;
4. Is waste subject to 40 CFR 268 regulations? X Yes No 11 Yes, is the waste at Waste Water or is there a specified method of treatment? Yes X No 11 Yes, list the specified method:	le Water or 🔯 Non Wastewater,
	\(\overline{\text{N}}\) Yes, provide waste codes, regulated hazardous constituent(s), and an explanation of determination.) des: This waste will be F001 listed for Trichtoroethylene (TCE). The groundwater at TAN is known to be contaminated from a known his gives the groundwater at TAN that has a concentration of TCE greater than 5 ugit. a F001 listing. Since the contaminated groundwater tent than 5 ugit., the debris will be F001 listed waste.
6. is waste characteristic per Subpart C of 40 CFR 2817 📋 Yes 🗵 No. (If Yes, provide waste codes, regulatory subcategory, and an explanation of determination.) Attachment included: 📋 Yes 🔯 No. Codes:	e codes, regulatory subcategory, and an explanation of determination.)
7. If hazardous, is the waste excluded for recycling in accordance with 40 CFR 261.2(e)(1)?   Tes   No If Yes, regulatory Citation:	Yes 🗵 No If Yes, regulatory Citation:
8, is the waste mixed or low level? [3] Yes No . (If Yes, include attachment with isotopic information.)	Mormation.)
9. Is waste TSCA regulated for either of the following? PCBs: Tes X No Asbestos:	Asbestos: ☐ Yes ⊠ No
B. Evaluation of Underlying Hazardous Constituents (UHCs)	
Does the waste require evaluation in accordance with 40 CFR 288.48?	s, identify UHCs.) UHCs: Attachment included:
C. Disposition and Data Gap Evaluation: (Attachment Included: ☐ Yes ⊠ No)	
1. Proposed Disposition (storage, treatment, disposel pathway): Direct Disposal at the iCDF	STP ID (mixed only): ID-CERCLA-MW
2. Will this waste be treated in a <90 storage area?   Yos No (If Yes, attach plan.) (Mixed and Hazardous Only)	and Hazardous Only)
3. Is the information provided adequate for complete waste determination, management, transportation, treatment, and disposal of waste? 🔯 Yes 📋 No. If No. Identify additional information or analysis required.	ntation, treatment, and disposal of waste?     Yes     No If No, Identify additional
D. Verification requirements: (Attachments Included:   Yes   No)	
X Yes	■ No If Yes, describe the verification to be performed. Physical verification of waste inventory is done on each container prior to
At Initial Storage Location:   Yes	Immediately Prior to Shipment:   Yes   No
2. What is the varification frequency? one-time only for each container	

INSECT. AMONG DESCRIPTION FOR A DISTOURAGE PORTS (WALL)

03/03/2000 Rev. 04

it le uracio		-					
1. 15 WGSIG	a DOT Regulated Hazardt	<ol> <li>Is waste a DOT Regulated Hazardous Material? [] Yes [] No If Yes:</li> </ol>	If Yes: DOT Primary Hazard:		DOT Subsidiary Hazard;	ard;	
2. Recomm	Recommended Packaging:						
3. Probable	Basic Description (PSN, I	Probable Basic Description (PSN, Hazard Class, DOT IO #. PG):					
4. Other info	4. Other information (special shipping conditions, etc.):	conditions, etc.);					
5. If contain	ers are already generated	, are they packaged correctly t	5. If containers are aiready generated, are they packaged correctly for the DOT hazard class? 🔲 Yes 🔝 No. If No, list container required.	Vo If No, list contat	ner required.		
	Packaging & Transportation Name Typed/Printed	ransportation ad/Printed		Packaging & Transportation Signature	portation		Date
Summary	Summary of Waste Determination:	Hazardous (see codes listed above)	Mixed Low-Level (see codes listed above)		☐ Low-Levet ☐ Conditional Industrial ☐Other (describe)	Gother (describe)	e.
l certify that information.	the Information in Section Willful or deliberate omis	III of this form and the applical	CERTIFICATIONS  I certify that the information in Section III of this form and the applicable attachments are fully disclosed and accurate. A good faith effort has been put forward to acquire and verify the information. Willful or deliberate omissions have not been made, and all known and suspected hazards have, to the best of my knowledge, been identified.	accurate. A good e, to the best of my	faith effort has been put for / knowledge, been identifie	rward to acquire an	nd verify the
	Larry Izzo	ozzi	Jones and	200			2/18/04
	WGS Technical Specialist Name Typed/Printed	Specialist Name		WGS Technical Sp Signature	oecialist		Date
	John Harris	Hamis	Sony lay For	John Hac	ris per telecon 2/181-4 3/18/04	3/181.4	4/1810H
	WGS independent Reviewer Name Typed/Printed	l Reviewer Name Printed	WGS Independent Reviewer Signature	WGS Independent F Signature	Reviewer		Dale
Low	Level Waste Hazardous Waste Det Typed/Plinted	Low Level Waste Hazardous Waste Determination Review Name Typed/Printed	Low Level Wa	aste Hazardous Wast Signature	Low Level Waste Hazardous Waste Determination Review Signature		Date

This WDDF includes attachments that show statistical calculations of sample data and process knowledge data. These calculations include the average, standard deviation, standard error, and 95% upper confidence limit. These values are used to populate the analytical concentrations in the WTS waste profile. By attaching these calculation sheets to this WDDF, it ensures that they will be reviewed by the Independent Reviewer prior to signing off.

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Comment of the comment of the Comment of the contract of the c

Material Profile Number: 3319N

Charge #: 3XNCC4F05

TAN Groundwater Field Lab. Analytical Residuals (F001)

3703/2000 Rev. 04

	Name	Contact
acte	am Conta	Waste Stream Contact?
WDDF Number (Optional): OU1-078 GWTF 001	per (Opt	WDDF Num
ne: TAN Groundwater	eam Nan	Waste Stream Name:
one:	nstructio	General Instructions

Contact:			E Mail	Dione Daner	Danier	Me	Santant.	Name		F.Mail			
Generator	Name		E-Mail	Name of A	- ARm		Contact:				Phone	Pager	MS
	Richa Farroll		carrre	6.2746	3551	3940	Technical Specialist	Lawrence P. Izzo	0.0	JEZZ)	6-3719	7730	9210
Facility Rep.	Facility Rep.: Joel Duling		dufijw	6-1994	2002	4142	Independent Reviewer:	John D. Harris		harris	8-3461	5324	3921
ECTION I:	ECTION I: PRCCESS (NOWLEDGE EVALU	LEDGE EVALUATIO	N (Comp	leted by th	не депел	ator with	ATION (Completed by the generator with assistance from the Facrity Representative)	Facrity Represen	stative)				
1. Waste Ge	Waste Generalion Location: Facility, TAN	Facility: TAN	Buildin	Building/Room: GWTF	GWTF		Area: laboratory If a	If applicable: Container #. Various	ner#: Various	1	Type/size: various	/arious	
2. Process a This In-S over rins NO NO Inclinding	nd Waste Description waste with the waste with the sention open (2) Carton diox ate. The waste will be F001 TE. A nickel altrate uded in the waste st	2. Process and Waste Description. (Attachment Included:  Yes  No)  This waste will be generated at the Groundwater Treatment Facility (GWTF) Field Laboratory. Wate In-Situ Eion neuralion Treatability Study. This waste steam vill include unaltered excess samples, oxygen; 2) Carbon dioxide; 3) fron; 4) Ammonia, 5) Phosphate; 6) Alkalinity; 7) Bromide; 8) BART; 9 rinsate. The waste will be generated in support of a CERNIA action and will be CERCIA derived wather waste will be generated in support of a CERNIA action and will be CERCIA derived wather waste will be solution may be used when sulfide interference exists in the Bromide and Iod included in the waste stream covered by material profile 3320N.	aded: Treathis waste ont of a C ste codes when su	Tyes No) Treatment Facility site storam, will in Photophate; 6) / a CERCILA action des. suffice interferent profile 3320N.	Vo) includ inclu	VTF) Fig. 6 unalte finity, 7) d will be wasts in	By Maste Description. (Attachment Included: [1] Yes [3] No)  This waste will be generated at the Groundwater Treatment Facility (GWTF) Field Laboratory. Water camples will be collected and analyzed to support the TaN Groundwater In-Situ Eion one nation Treatability Study. This waste stolen: will include unaltered excess samples, aligned samples, and rinsate from the following analysis: 1) Dissolved oxygen; 2) Carbon dioxide; 3) Iron; 4) Ammonia, 5) Phosphate; 6) Alkalinity; 7) Bromide; 8) BART; 9) iodide; 10) Hydrolab standards and rinsate; 11) bleach and bleach rinsate. The waste will be generated in support of a CERCLA action and will be CERCLA derived waste; it will be stored at the GWTF CERCLA Winste Storage Area (CSWA). The waste will be used when sulfide interference exists in the Bromide analyses. In this case, the rinsate from these analyses will be included in the waste stream covered by material profile 3320N.	camples will be allyzed samples iodide; 10) Hydrote, it will be store analyses. In the	camples will be collected and analyzed to support the TAN Groundwate aligned samples, and rinsate from the following analysis: 1) Dissolved iodide; 10) Hydrolab standards and rinsate; 11) bleach and bleach stell be stored at the GWTF CERCLA Wriste Storage Area (CSWA analyses. In this case, the rinsate from these analyses will be	yzed to surporthe following d rinsate; 11) ERCLA Winst	on the TA gradysis: bleach ar te Storage enalyses	N Ground 1) Disso and bleach Area (C)	dwater Nved
3. Were any Can	<ol> <li>Were any waste minimization activities a part Care is trien to use only the amount o</li> </ol>	any waste minimization activities a part of this process. Si Yes II No (If Yes, provide de Care is tallen to use only the amount of materials required to correctly preform the analysis	is proces	s: X Yes	Trectly p	(If Yes	t of this process: SX Yes	r reference.)					
4. Generation	Generation Status. [] Anticipated	cipated   Existing		Routine operations     Routine opera	e operali	ions	Cleanup/Stabilization Activities	tion Activities	☐ One Time Only ☑ On-going	Only Mon-		Secondary	dary
5. Other gen	eration information.	5. Other generation information. This waste will be generated to support of a CERCLA clean-up	enerated	to support	of a CE	RCLA	dean-up						
6. Physical C	<ol><li>Physical Description (check all that pply).</li></ol>	ill that Color, various	arions	Dlos 🗆		☐ Organic Liquid	Iquid M Aqueous Uquid		☐ Sludge ☐ Aerosof	☐ Gas Cylinder		☐ Multi-Layered	yered
/ Sources u Waste Deter	sed for process eva mination CU 1-078	aluation (e.g. MSDS, o	peration	el logs, pro	ocedures ab Resik	s, analy duals B	// Sources used for process evaluation (e.g. MSDS, operations! togs, procedures, analyses): Review of laboratory procedures, Test Kit instructions and MSDSs, and "Hezardous Waste Determination CU 1-078 TAN Groundwater Remeadiation Field Lab Residuals Bioremediation Troatability Study" prepared by Michael D. Jorgensen.	itory procedures, lity Study" prepar	Test Kit instructioned by Michael D.	ns and MSD: Jorgensen	Ss, and "H	lazardour	80
8. Waste Characteristic identified at a later date	aracteristics: Note:	The waste characteri	stics ma	y not be kr	nown at	time of	8. Waste Characteristics: Note: The waste characteristics may not be known at time of initial determination. If required for treatment or characterization, those parameters will be identified at a fater date.	frequired for tree	alment or characte	rization, thos	e parame	ters will ?	96
	Liquids	100				Solids	sp			All			1000
a. pH (aqueous cally)	ueous quily): ☐ ≥ 12.5 Exact	Method, Process Knowledge		h. Asbestos: If yes, is it friable?	Sele?		O Yes O № ⊠ NA		n. PCBs: If Yes, provide concentrations (actual & source) in composition table. PCBs Bulk Product? (40 CFR 751.62)?	ncentrations sition table. FR 761.62)?	□ Yes		¥ ¥
b. Flash Point		Method:	i. Py	i. Pyrophoric (Water Reactive)	Water R.	eactive)	□ Yes □ No ⊠ NA		o. Sulfide > 500 mg/kg		O Yes	No ⊠	ž
c. Total susp	c. Total suspended solids <1% [2] Yes		NA J. FE	ammable §	Solid		☐ Yes ☐ No 図 NA	193	p. Cyanide ≥ 250 mg/kg		O Yes		Ž
d, is total on	d. Is total organic carbon <1%	M Yes □ No □ NA	NA					q. Oxidizer	er		O Yes	No X	ž

# INEEL WASTE DETERMINATION & DISPOSITION FORM (WDDF)

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Waste Stream Name: T	TAN Groundwater Field Lab. Analytical Residuals (F001)	1 Lab. Anal	ytical Residu	als (F001)		Mat	Material Profile Number: 3319N	3319N
e. Furning Acid/Acid Gases	☐ Yes ⊠ No ☐ NA	k. Free liquids: 1 to 10 volume %	k. Free liquids: If Yes, quantity 0 to 10 volume %	lity 0   Yes	No ⊠ NA		r. Treatment Residue	□ Yes ☑ No □ NA
f. Pyrophoric (Air Reactive)	□ Yes ⊠ No □ NA	-	I. RCRA Debris (>60 mm)	□ Yes	S No INA	s. Explosive	sive	□ Yes ⊠ No □ NA
		(2 50% by visual in non-RCRA Rubble	(2 50% by visual inspection) or non-RCRA Rubble	) or	AN O ON M	t. Radioactive	active	Ø Yes □ No □ NA
g. Water Reactive	☐ Yes ☑ No ☐ NA	m. Pyrophor	m. Pyrophoric (Air Reactive)	) O Yes	s ☐ No ⊠ NA		u. Halogens (Cl, F, Br)	☐ Yes ⊠ No ☐ NA
11. Waste Composition: (Must total 100%). Attachment Included:	total 100%). Attachment		☐ Yes ⊠No	₩ □				
Constituent	=	CAS No.	Analysis (If o	constituent is otherv From	Range (if constituent is <1%, use mg/kg or mg/L, otherwise report in %) From To Units		Used as a Solvent? (Y/N)	Comments
Aqueous liquid waste with TCE			ΡK	100	100	% wt.	NA	
12. RadioIsotopes: Are radioisotopes present?	1	If Yes, refer	to attachment	□ No, If N	Yes, If Yes, refer to attachment □ No, If No, include signed form 435.02	form 435.0	2	
SECTION IF PROBABLE WASTE TYPE: (Completed by the Facility Representative and used to assign waste technical specialist and for appropriate management until final waste determination is made.)	TE TYPE: (Completed by	the Facility F	Representative	and used to	assign waste tech	ınical speci	alist and for appropriate m	nanagement until final waste
Based on evaluation of the process and available data the waste type indicated is (check all that apply)	ess and available data the	waste type in	ndicated is (che	ck all that ag	pply):			
Hazardous Only	Mixed		☐ Radioactive Only	Only	0 0	Conditional Industrial	ndustrial	II Used OII
☐ Material Exchange	☐ Lab Pack		Non-conditional Industrial	onal Industria		□ TSCA	☐ Other - Describe:	
☐ Recyclable: ☐ Non Radioactive Lead (>99	scrive Lead (>99+ % Lead)	)   Lead Batteries	Batteries   Silver		☐ RCRA Scrap metal ☐ Other - Describe:	□ Other	- Describe:	
Indicated Waste Codes: F001								
Mary articulation of the Control of								

# INCEL WAS TE DETERMINATION & DISPOSITION FORM (WDDF)

03/03/20/10 Rev. 04 Material Profile Number: 3319N CERTIFICATION TAN Groundwater Field Lab. Analytical Residuals (F001) Waste Stream Name:

I certify that the information in Section I of this form and the applicable attachments are fully disclosed. A good faith effort has been put forward to acquire and verify the information. Walful or aritherate omissions have not been made, and all known and suspected hazards have, to the best of my knowledge, been identified. The WGS Facility Representative, based on information provided, has assigned a probable waste type in Section II. 8/20/02 Date WGS Facility Representative Signature Riena Carrelle Joel Duling WGS Facility Representative Name Typed/Printed Riena Carroll Generator Name Typed/Printed

## WELL MAST LUE LEMBERS HOW & DIO COLLON PORM (WORF)

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SECTION III WASTE DETERMINATION AND DISPOSITION (Completed by the WGS Technical Specialist)	chrical Specialist)
A. Waste Determination	
1. Is this a solid waste (per 40 CFR 251.2)? ☑ Yes ☐ No (If No, attach regulatory citation)	(uo
2. Is this a Hazardous Waste (per 40 CFR 251.3)? 🖾 Yes 🗆 No	
3. Is waste excluded from regulation under 40 CFR 261.4? Tes St. No. If Yes, Regulatory citation.	atory citation:
4. Is waste subject to 40 CFR 268 regulations? ☒ Yes ☐ No. If Yes, is the waste at ☒ Waste Water or ☐ Non Wastewater, is there a specified method of treatment? ☐ Yes ☒ No. If Yes, list the specified method.	Waste Water or 🔲 Non Wastewater.
5, is waste listed in Subpart D of 40 CFR 2617 🗌 Yes. 🗎 No. (If Yes, provide waste codes, regulated hazardous constituent(s), and an explanation of determination.  Attachment included: 🔲 Yes. 🗵 No. Codes: F001. This waste is F001 listed for Trichloroethylene (TCE). TCE has been detected in the TAN groundwater at c. (32 ppm. The source of the TCE is known to be from a listed waste source.	8017 🗌 Yes 🔲 No. (If Yes, provide waste codes, regulated hazardous constituent(s), and an explanation of determination.) Codes: F001. This waste is F001 listed for Trichloroethylene (TCE). TCE has been detected in the TAN groundwater at concentrations up in to be from a listed waste source.
8. Is waste characteristing the Subpart C of 40 CFR 261?	40 CFR 261?   Yes C No (If Yes, provide waste codes, regulatory subcategory, and an explanation of determination.) Codes: None
7. If hazardous, is the waste excluded for recycling in accordance with 40 CFR 261.2(e)(1)?   Ves   No	? ☐ Yes [⊠ No if Yes, regulatory Citation.
8. Is the waste mixed or low level? 🛛 Yes 📋 No. (If Yes, indude attachment with isotopic information.)	opic Information.)
9. is waste TSCA regulated for either of the following? PCBs: ☐ Yes ☒ No Asbe	Asbestos: 🔲 Yes 🖾 No
B. Evaluation of Underlying Hazardous Constituents (UHCs)	
Does the waste require evaluation in accordance with 40 CFR 268.487 🔯 Yes 🔲 No (If Yes, identity UHCs.) UHCs. None. Attachment included: 📋 Yes 🔯 No	(if Yes, identify UHCs.) UHCs. None Attachment included: 📋 Yes 🔯 No
% Disposition and Data Gap Evaluation: (Attachment Included: ☐ Yes ☒ No)	
./ Proposed Disposition (storage, treatment, disposal pathway). Returned to TAN Groundwater via New Pump and Treat Facility (NPTF) or INEEL Off-Site contracted facility.	water via New Pump and Treat Facility STP ID (mixed only): INEEL 1yr
2. Will this waste be treated in a <90 storage area? Tives No (If Yes, attach plan.) (Mixed and Hazardous Only)	Mixed and Hazardous Only)
3. Is the information provided adequate for complete waste determination, management, transportation, treatment, and disposal of waste? 🔯 Yes 📋 No. If No. identify additional information or analysis required.	ansportation, treatment, and disposal of waste?     Yes     No   I No, identify additional
D. Verification requirements: (Attachments Included:   Ves   No)	
1. Will verification be performed on this waste? 🔯 Yes. 📋 No. If Yes, describe the verification to be performed. At time of packaging	ation to be performed. At time of packaging
- 1	
At Initial Storage Location: X Yes L No	Immediately Prior to Shipment:   Yes   No
2. What is the verification frequency? when generated	

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E. Prekaging and Iransportation	on Requirements (to be compa	E. Proxaging and Itansportation Requirements (to be completed by Pa.); Complete this section drift wastes are to be transported.	nly it wastes are	e to be transported.	
1. Is waste a DOT Regulated Hazardous Material? [3] Yes	andous Material? [3] Yes   No	If Yes: DOT Primary Hazerd: Chss 9	859	DOT Subsidiary Haza	DOT Subsidiary Hazard: TARCE Raconnelides
2. Recommended Packaging:	Un 141 Specification Dawns	m daums			
3 Procable Basic Description (PSI	N, Hazard Class, DOT ID #, PG	3 Proceable Basic Description (PSN, Hazard Class, DOT ID #. PG); Answares who TR. Light D. S. (FOOL) 9, MA 3082	10 NO.S.	( FOOT ) 9, NA3.	082 AGIII
4. Other information (special shipping conditions, etc.): Leap Peoof Spec Continues	ang conditions, etc.): Leaph	toof Spire Contraveres of	,		
5 If containers are already genera	ted, are they packaged correctly	5 if containers are already generated, are they packaged correctly for the DOT hazard class? [X Yes II] No If No, list container required	to If No, list cont	tainer required	
LONNEY	LONNEY L. NATE	7	my A Mate	et	8/13/02
Packaging	Packaging & Transportation Name Typed:Printed	 	Signature	portation	Date
Summary of Waste Leteraination:	Hazhrdous (see codes listed above)	Mixed Low-Level (see codes listed above)	□ Low-Level	Conditional Industrial	Other (describe)
certify that the information in Sec the information. Wilful or delibera	tion III of this form and the apple te omissions have not been ma	CERTIFICATIONS I certify that the information in Section III of this form and the applicable attachments are fully disclosed and accurate. A good faith effort has been put forward to acquire and verify the information. Withut or deliberate omissions have not been made, and all known and suspected hazards have, to the best of my knowledge, been identified.	accurate. A goo	od faith effort has been put t of my knowfedge, been id	forward to acquire and verify tentified.
Lawren	Lawrence P. Izzo	January 1	- kno		8-15-09
WGS Technic Type	WGS Technical Specialist Name TypediPrinted	11.11	WGS/fighnical Specialist Signature	vecialist	Date
John	John D. Harris	Moderaldia		SANSON STREET, SANSON	20-4-S
WGS independ	WGS independent Reviewer Name TypediPrinted		WGS Independent Reviewer Signature	Zaviewer	Date
Low Level Waste Hazardous V	Low Level Waste Hazardous Waste Deformination Review Name Tweed-Printed	Low Level Wass	e Hazardous Washe	Low Lovel Waste Hazardous Waste Determination Review Schooling	Date
-11.					

Additional Narrative Information (As Needed):

This waste determination was based on knowledge of Process, Test Kit instructions, Test Kit MSDSs, and internal report "Hazardous Waste Determination OU 1-07B TAN Groundwater Remediation Field Lab. Residuals Bioremediation Treatability Study" prepared by Michael D. Jorgensen, Lance N. Peterson, Robert C. Starr. The waste at it's present storage location is regulated by CERCLA, if when it is removed and sent to a TSFD for treatment it becomes regulated by RCRA. The waste stream is to be reviewed annually.